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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,950	10/31/2003	Thomas M. Golner	87304.1980	7624

7590 04/19/2006

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EXAMINER
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WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/697,950	<b>Applicant(s)</b> GOLNER ET AL.	
	<b>Examiner</b> Alexis Wachtel	<b>Art Unit</b> 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3-10-05</u> | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

***Drawings***

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). In particular, with respect to claim 17, an illustration describing the claimed structure is required to facilitate prosecution.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Structural elements critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). In particular, the structure described in claim 17 does not adequately explain how the claimed structure operates with the orifice. Applicant does not provide an explanation of this structure in the specification.

Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Structural elements critical or essential to the practice

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of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). In particular, the structure described in claim 19 does not adequately explain how the gas remover can include a reporting system to send load tap changer condition information to a distal information handling location. Particularly, it is not understood what means are used to measure any information that is to be relayed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understood how the down-pointing vent pipe terminating the path between said orifice and the atmosphere having a buoyant float caged within said vent pipe; and a seat in said vent pipe against which said buoyant float can bear to provide a seal when said buoyant float is lifted by liquids of higher specific gravity than the specific gravity of said float if the vent pipe is located in the ullage space where there is no liquid present.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-16, 18,20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6581694 to Golner et al.

With respect to claim 1, Golner teaches a gas remover comprising:

a source of substantially non-reactive gas (58) at a pressure greater than ambient atmospheric pressure; a feed line (feed lines emanate from manifold 66) configured to introduce the non-reactive gas into a ullage in a transformer (14) and a ullage in a load tap changer (24) and an orifice (26) configured to establish an outflow rate of non-reactive gas and entrained vapor phase contaminants if present from the transformer ullage to the atmosphere.

Golner does not explicitly teach that the load tap changer has a orifice configured to establish an outflow rate of non reactive gas and entrained vapor phase contaminants if present from the load tap changer to the atmosphere. However, Golner does teach that a pressure relief valve (26) (that corresponds to an orifice) associated with the transformer is useful for the purpose of relieving excess pressure in the transformer (Col 4, lines 30-36). Since a load tap changer also would conceivably be negatively impacted by excess pressurization, it would have been obvious to have provided the load tap changer with a pressure relief valve as well (which corresponds to the claimed orifice) for the purpose of providing pressure relief under excess pressure conditions.

With respect to claim 2, Golner teaches that the gas remover further comprises a nitrogen generator (30) configured to extract nitrogen from the atmosphere for use as the substantially non-reactive gas.

With respect to claim 3, Golner teaches that the gas remover further comprises an inlet air filtration system (32) to filter air entering said nitrogen generator.

With respect to claim 4, Golner teaches that the remover further comprises an air compressor (34) to furnish compressed air to said nitrogen generator.

With respect to claim 5, Golner teaches that the gas remover further comprises a gas separating membrane (36) within said nitrogen generator, wherein said separating membrane is capable of removing gases including at least one of ozone, carbon compounds, sulfur dioxide, and hydrogen sulfide from the outflow stream from said nitrogen generator to limit each contaminant to a maximum of 1 part per million of the mass of the outflow gas. Examiner notes that the separating membrane is capable of separating out the claimed gases since such gases are inherently found in trace amounts in air, and would necessarily be removed by a purifying mechanism in order to yield pure nitrogen.

With respect to claim 6, Golner teaches that the gas remover further comprises a gas separating membrane (36) within said nitrogen generator, wherein said separating membrane is capable of removing gases including at least one of oxygen and water vapor from the outflow stream from said nitrogen generator to limit each contaminant to a levels specified by the American Society of Testing and Materials (ASTM) for Type I insulating gas. Examiner notes that the separating membrane is capable of separating out the claimed gases since such gases are inherently found in trace amounts in air, and would necessarily be removed by a purifying mechanism in order to yield pure nitrogen.

With respect to claim 7, Golner teaches that the gas remover further comprises a storage reservoir (52) within said nitrogen generator configured to store nitrogen during an operational period for said nitrogen generator.

With respect to claim 8, Golner teaches that the gas remover further comprises a pressure regulator (54) in the feed line from said nitrogen generator to the load tap changer ullage to lower the nitrogen pressure from a first pressure level at which the nitrogen is generated and stored to a second pressure level at which it is introduced into the load tap changer ullage.

With respect to claim 9, Golner teaches that the gas remover further comprises a gas flow path that establishes an effective output venting rate from the load tap changer ullage to a standard atmosphere. Examiner notes that the teachings of Golner as set forth in the rejection of claim 1 establishes the use of a pressure relief valve with a load tap changer (corresponding to the claimed orifice). Therefore, a gas flow path is inherently provided that establishes venting as claimed.

With respect to claim 10, Golner teaches that the venting rate is dependent on total gas pressure within the ullage. As established in the rejection of claim 1, establishes the use of a pressure relief valve with a load tap changer (corresponding to the claimed orifice). Therefore, the venting rate is dependent on the total pressure in the load tap changer.

With respect to claim 11, Golner teaches that the gas remover further comprises a gas flow path establishing an output venting rate from the load tap changer ullage to

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the atmosphere surrounding the load tap changer of approximately 2 cubic feet of nitrogen per day. As established in the rejection of claim 1, establishes the use of a pressure relief valve with a load tap changer (corresponding to the claimed orifice). Therefore, the venting rate is dependent on the total pressure in the load tap changer and is capable of venting the claimed volume of nitrogen per day.

With respect to claims 12 and 13, Golner teaches an alternative pressure regulation facility (58) in the feed line from said nitrogen generator to the load tap changer ullage, which is capable of providing an increased flow rate from the nitrogen section to the load tap changer ullage during a venting cycle.

With respect to claims 14 and 15, Golner teaches that the gas remover further comprises a control mechanism (54) that permits selection of said alternative pressure regulation facility. Golner is silent as to the control mechanism's automatic or manual operation. However, the control mechanism must be either controlled automatically or manually and one of ordinary skill would have understood that manual or automatic operation would have been well within the realm of ordinary skill and as such would have been obvious at the time of the invention.

With respect to claim 16, Golner fails to teach that the gas remover further comprises an orifice check valve between said orifice and the atmosphere. However, it is well established that check valves prevent backflow of gases into a valve. In the instant case, the ullage space in the load tap changer is optimally isolated in such a manner from the outside environment as to prevent environmental contaminants from entering the load tap changer ullage space. One of ordinary skill would have understood



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that the use of an orifice or pressure relief valve would have advantageously included a check valve. In view of this teaching it would have been obvious to one of ordinary skill to have provided the relief valve/orifice as provided in the ullage space of the load tap changer with a check valve for the purpose of preventing backflow into the relief valve/orifice.

With respect to claim 18, the instant limitation is not given any patentable weight as it does not provide any additional structure to the claimed apparatus.

With respect to claim 20, Golner teaches a gas remover for expelling gases from a load tap changer comprising means (10) for extracting nitrogen gas from the atmosphere; means (64) for urging said extracted nitrogen gas into an ullage in a load tap changer. Golner does not teach means for establishing a substantially continuous outflow of nitrogen from the ullage to the atmosphere along with entrained vapor phase contaminants, if present. However, Golner does teach that a pressure relief valve (26) associated with the transformer is useful for the purpose of relieving excess pressure in the transformer (Col 4, lines 30-36). Since a load tap changer also would conceivably be negatively impacted by excess pressurization, it would have been obvious to have provided the load tap changer with a pressure relief valve as well for the purpose of providing pressure relief under excess pressure conditions.

With respect to claim 21, Golner teaches means (32) for filtering atmospheric air introduced into said nitrogen generator; and means for compressing (34) atmospheric air introduced into said nitrogen generator to a pressure level sufficient to extract nitrogen therefrom.

With respect to claim 22, Golner teaches means (36) for separating gaseous nitrogen from the compressed atmospheric air introduced into said nitrogen generator.

With respect to claim 23, Golner does not explicitly teach means for applying power to said compressing means; means for controlling application of power to said compressing means; means for establishing pressure thresholds at which power directed to said compressing means may be applied and removed. It would have been obvious to have provided the compressing means with such features since compressing means inherently require a power source and a means for establishing pressure thresholds as provided via the use of a regulator. One of ordinary skill would have understood that providing a compressing means with this additional claimed structure would have involved routine engineering design choice absent a showing of unexpected results.

With respect to claim 24, Golner teaches a process for expelling gases from a load tap changer, comprising the steps of: extracting nitrogen gas from the atmosphere (Accomplished by air being fed into (10); urging the extracted nitrogen gas into an ullage in a load tap changer (accomplished by 64). Golner does not teach establishing a substantially continuous outflow of nitrogen from the ullage to the atmosphere along with entrained vapor phase contaminants if present. However, Golner does teach that a pressure relief valve (26) associated with the transformer is useful for the purpose of relieving excess pressure in the transformer (Col 4, lines 30-36). Since a load tap changer also would conceivably be negatively impacted by excess pressurization, it would have been obvious to have provided the load tap changer with a pressure relief

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valve as well for the purpose of providing pressure relief under excess pressure conditions which would meet the claimed method limitation.

With respect to claim 25, Golner teaches the steps of: filtering atmospheric air in advance of extracting nitrogen therefrom (accomplished by 32); and compressing atmospheric air to a pressure level sufficient to extract nitrogen therefrom (accomplished by 34).

With respect to claim 26, Golner teaches the step of separating gaseous nitrogen from the compressed atmospheric air (accomplished by 36).

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,581,694 to Golner et al in view of US 5,809,976 to Cook et al.

With respect to claim 17, while Golner as set forth above establishes the use of a orifice/relief valve, Golner fails to teach that the gas remover further comprises: a down-pointing vent pipe terminating the path between said orifice and the atmosphere; a buoyant float caged within said vent pipe; and a seat in said vent pipe against which said buoyant float can bear to provide a seal when said buoyant float is lifted by liquids of higher specific gravity than the specific gravity of said float. Cook et al teaches a down pointing vent pipe defined by (36), a buoyant float (64) caged in the vent pipe which can bear to provide a seal when said buoyant float is lifted by liquids of higher specific gravity than the specific gravity of said float. The vent valve is useful in vapor recovery applications. Since Golner et al uses a relief valve/orifice to vent a ullage, it would have been obvious to have modified the relief valve/orifice to function with the

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apparatus taught in accordance with the teachings of Cook et al. One of ordinary skill would have been motivated by the desire to provide more optimal venting means.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,581,694 to Golner et al in view of US 5619121 to Trainor et al.

With respect to claim 19, Golner does not teach that the gas remover further comprises a reporting system to send load tap changer condition information to a distal information handling location. Trainor et al discloses a load tap changer monitoring system (Fig.1) that allows for remote monitoring of a load tap changer (Col 2, lines 55-60). In view of this teaching it would have been obvious to one of ordinary skill to have employed a load tap monitoring system as disclosed by Trainor et al for the purpose of allowing rapid remote assessment of a load tap changer's operating condition.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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